

**Europäisches Patentamt** 

**European Patent Office** 

Office européen des brevets



(11) EP 0 660 421 A3

(12)

## **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3: 05.11.1997 Bulletin 1997/45

(51) Int. Cl.<sup>6</sup>: **H01L 27/146**, H04N 1/031

(43) Date of publication A2:28.06.1995 Bulletin 1995/26

(21) Application number: 94120730.0

(22) Date of filing: 27.12.1994

(84) Designated Contracting States: **DE FR GB IT NL** 

(30) Priority: 27.12.1993 JP 331690/93 22.08.1994 JP 196640/94 22.08.1994 JP 196641/94 22.08.1994 JP 196642/94 22.08.1994 JP 196643/94 22.08.1994 JP 196644/94 22.08.1994 JP 196645/94 22.08.1994 JP 196670/94 16.12.1994 JP 313392/94

(71) Applicant: CANON KABUSHIKI KAISHA Tokyo (JP)

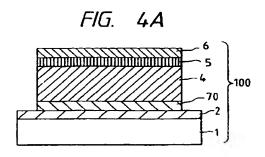
(72) Inventors:

Kaifu, Noriyuki,
 c/o Canon Kabushiki Kaisha
 Ohta-ku, Tokyo 146 (JP)

- Mizutani, Hidemasa,
   c/o Canon Kabushiki Kaisha
   Ohta-ku, Tokyo 146 (JP)
- Takeda, Shinichi,
   c/o Canon Kabushiki Kaisha
   Ohta-ku, Tokyo 146 (JP)
- Kobayashi, Isao,
   c/o Canon Kabushiki Kaisha
   Ohta-ku, Tokyo 146 (JP)
- Itabashi, Satoshi,
   c/o Canon Kabushiki Kaisha
   Ohta-ku, Tokyo 146 (JP)
- (74) Representative:
  Pellmann, Hans-Bernd, Dipl.-Ing. et al
  Patentanwaltsbüro
  Tiedtke-Bühling-Kinne & Partner
  Bavariaring 4
  80336 München (DE)

(54) Photoelectric converter, its driving method, and system including the photoelectric converter

(57) A photoelectric converter of a high signal-tonoise ratio, low cost, high productivity and stable characteristics and a system including the above photoelectric converter. The photoelectric converter includes a
photoelectric converting portion 100 in which a first
electrode layer 2, an insulating layer 70 for inhibiting
carriers from transferring, a photoelectric converting
semiconductor layer 4 of a non-single-crystal type, an
injection blocking layer 5 for inhibiting a first type of carriers from being injected into the semiconductor layer
and a second electrode layer 6 are laminated in this
order on an insulating substrate 1.





## **EUROPEAN SEARCH REPORT**

Application Number EP 94 12 0730

Category	Citation of document with in of relevant page	dication, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CL6)
X		MURA FUJIO) 11 March		H01L27/146 H04N1/031
	* column 3, line 4 * column 5, line 7	- column 2, line 11 * - line 35 *		
A			34	
X	July 1993 * abstract; figures * column 1, line 52 * column 5, line 17	1,3,4 * - column 2, line 19 * - column 6, line 22 *	1,2,4,5, 27,34	
A	* claim 7 *		25,26,35	
A	EP 0 296 603 A (CAN	ON KK) 28 December 1988	1,3-24, 27,34	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
	* column 6, line 44	- column 2, line 6 * - line 45 * - line 59 * - column 10, line 9 * 5 - line 59 *		H01L H04N
		-/		
	The present search report has b			
		Date of completion of the search 29 August 1997	Vie	Examiner School F
	THE HAGUE  CATEGORY OF CITED DOCUME			scher, E
X:pas	rticularly relevant if taken alone rticularly relevant if combined with and	E : earlier patent doc after the filing da	cument, but publ ate	ished on, or



## **EUROPEAN SEARCH REPORT**

Application Number EP 94 12 0730

Category	Citation of document wit of relevant	th indication, where appropriate, passages	Relevant to claim	CLASSIFICATION OF TH APPLICATION (Int.CL6)
A	ON SOLID STATE DE TOKYO, JAPAN, 30 4-930813-04-2, 19 SOC. APPL. PHYS, pages 201-204, XPOKUMURA F ET AL:		8,10, 17-21	
A	1989	OF JAPAN (P-936), 25 September (FUJITSU LTD), 23 June	1,6	
				TECHNICAL FIELDS SEARCHED (Int.Cl.6)
	The present search report has	been drawn up for all claims		
	Place of search	Date of completion of the search	<u>l</u>	Examiner
THE HAGUE		29 August 1997	Visscher, E	
X : partic Y : partic docur A : techn	ATEGORY OF CITED DOCUM cularly relevant if taken alone cularly relevant if combined with a nent of the same category ological background written disclosure nediate document	E : earlier patent do after the filing d nother D : document cited L : document cited f	ole underlying the incument, but publish ate in the application or other reasons	ovention need on, or

This Page Blank (uspto)